

PROGRAM AT-A-GLANCE

THURSDAY, OCTOBER 22, 2020

8:45 – 9:00 am ET
OPENING REMARKS

9:00 – 10:30 am ET
SYMPOSIUM #1 / Probing the Network: New Approaches for Studying Mechanisms of Target Engagement

Moderator / Paul Sajda

- Aaron Suminski, Examining Central Mechanisms of Target Engagement in Peripheral Nerve Neuromodulation
- Kristl Vonck,
- Sarah "Holly" Hollingsworth Lisanby

10:30 – 11:00 am ET
Break

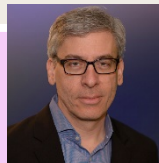
11:00 am – 12:30 pm ET
SYMPOSIUM #2 / Next Generation Hardware: New Approaches to Stimulation and Recording at the Neural Interface

Moderator / Cindy Chestek

- John Rogers, Soft, Wireless Optoelectronic Systems for Neuroscience Research
- Polina Anikeeva, Modulating Neural Function with Magnetic Nanotransducers
- Silvestro Micera, i4LIFE: Intraneural Stimulation to Restore Sensory, Motor and Autonomic Neural Functions

12:30 – 1:30 pm ET
Break

1:30 – 2:30 pm ET
KEYNOTE / Robert Greenberg, MD, Ph.D.



FRIDAY, OCTOBER 23, 2020

9:00 – 10:00 am ET
KEYNOTE / Helen Mayberg, MD
Recovery Is Not Linear: Implications for Optimizing DBS for Depression



10:00 – 10:30 am ET
Break

10:30 am – Noon ET
SYMPOSIUM #3 / Translational Neuroscience Trials: Early Clinical Data

Moderator / Erika Ross

- Alireza Gharabaghi, Perspectives of Brain Stimulation for Motor Restoration
- Monica Perez, Targeted Neuroplasticity for Recovery Following Spinal Cord Injury
- Mark George

12:00 – 1:00 pm ET
Break

1:00 – 2:30 pm ET
SYMPOSIUM #4 / Neural Data Science and Analytics

Moderator / Metin Akay

- Ritu Kapur, A Virtual Motor Exam for Parkinson's Disease: Frameworks for Remote Monitoring
- Sridevi Sarma, Uncovering Consistent Principles of How Cortical Regions Govern Behaviors Across Subjects with Variable Neural Recordings
- Sooyoon Shin

2:30 – 3:00 pm ET
Break

3:00 – 4:00 pm ET
INDUSTRY PANEL

- Chris Berka, Advanced Brain Monitoring
- Felix Deku, PhD, Neuralink

- Amy Kruse, PhD, Sattva Science
- Ana Maiques, Neuroelectrics
- Martha Morrell, MD, NeuroPace
- Brian Pepin, Rune Labs

4:00 – 4:15 pm ET
BEST POSTER AWARD PRESENTATION AND CLOSING REMARKS

WORKSHOP CO-CHAIRS

Metin Akay

Metin Akay is currently the founding chair of the new Biomedical Engineering Department and the John S. Dunn professor of biomedical engineering at the University of Houston. He received his B.S. and M.S. in Electrical Engineering from the Bogazici University, Istanbul, Turkey in 1981 and 1984, respectively and a Ph.D. degree from Rutgers University in 1990. He is also the President-Elect of the IEEE Engineering in Medicine and Biology (EMBS). Dr. Akay has edited several books, editing several special issues of prestigious journals, including the Proc of IEEE, and giving more than hundred keynote, plenary and invited talks at international conferences, symposiums and workshops regarding emerging technologies in biomedical engineering. He is the founding editor-in-chief of the Biomedical Engineering Book Series published by the Wiley and IEEE Press and the Wiley Encyclopedia of Biomedical Engineering. He is also the editor of the Neural Engineering Handbook published by Wiley/IEEE Press and served as the first steering committee chair of the IEEE Trans on Computational Biology and Bioinformatics. He established the Annual International Summer School on BIO-X sponsored by the NSF and the IEEE EMBS and served as the founding chair of the IEEE EMBS Special Topic Conference on Neural Engineering.

Dr. Akay is a recipient of the IEEE EMBS Early Career and Service awards as well an IEEE Third Millennium Medal and is a fellow of IEEE, the Institute of Physics (IOP), the American Institute of Medical Biological Engineering (AIMBE) and the American Association for the Advancement of Science (AAAS). His Neural Engineering and Informatics Lab is interested in developing an intelligent wearable system for monitoring motor functions in Post-Stroke Hemiplegic Patients and detecting coronary artery disease. In addition, his lab is currently investigating the effect of maternal nicotine and alcohol in fetus and newborns. His lab has also developed a novel Brain Chip for precision medicine as well as the detection of coronary occlusions.



Paul Sajda

Paul Sajda is a Professor of Biomedical Engineering, Electrical Engineering and Radiology (Physics) at Columbia University. He is also a Member of Columbia's Data Science Institute and an Affiliate of the Zuckerman Institute of Mind, Brain and Behavior. He received a BS in electrical engineering from MIT in 1989 and an MSE and PhD in bioengineering from the University of Pennsylvania, in 1992 and 1994, respectively. Professor Sajda is interested in what happens in our brains when we make a rapid decision and, conversely, what processes and representations in our brains drive our underlying preferences and choices, particularly when we are under time pressure. His work in understanding the basic principles of rapid decision-making in the human brain relies on measuring human subject behavior simultaneously with cognitive and physiological state. Important in his approach is his use of machine learning and data analytics to fuse these measurements for predicting behavior and infer brain responses to stimuli. Professor Sajda applies the basic principles he uncovers to construct real-time brain-computer interfaces that are aimed at improving interactions between humans and machines. He is also applying his methodology to understand how deficits in rapid decision-making may underlie and be diagnostic of many types of psychiatric diseases and mental illnesses.

Professor Sajda is a co-founder of several neurotechnology companies and works closely with a range of scientists and engineers, including neuroscientists, psychologists, computer scientists, and clinicians. He is a fellow of the IEEE, AMBE and AAAS and Chair of the IEEE Brain Initiative. He is also a recent recipient of the DoD's Vannevar Bush Faculty Fellowship (VBFF).



PROGRAM CO-CHAIRS

Cynthia Chestek

Cynthia A. Chestek, PhD. received the B.S. and M.S. degrees in electrical engineering from Case Western Reserve University in 2005 and the Ph.D. degree in electrical engineering from Stanford University in 2010. She was a postdoc at the Stanford Department of Neurosurgery with the Braingate 2 clinical trial. She is now an associate professor of Biomedical Engineering at the University of Michigan, Ann Arbor, MI, where she joined the faculty in 2012. She runs the Cortical Neural Prosthetics Lab, which focuses on brain and nerve control of finger movements as well as to high-density carbon fiber electrode arrays. She is the author of 49 full-length scientific articles. Her research interests include high-density interfaces to the nervous system for the control of multiple degree of freedom hand and finger movements.



Erika Ross

Erika Ross is the Director of Applied Research at Abbott Neuromodulation, leading applied research strategy, external partnerships, portfolio, and execution. Applied research includes computational modeling, pre-clinical, feasibility, and clinical safety trials that feed new products and indications. Prior to her role at Abbott, Erika was the Neuroscience Director at Cala Health, a Stanford Biodesign incubated start-up that has been developing a non-invasive, digitally enabled neuromodulation solution for Essential Tremor patients.



She has held roles of increasing leadership at Cala Health as the company completed development and prepared for commercialization and played a major role in developing their digital health architecture and team. Prior to Cala Health, Erika held the roles of Assistant Professor of Neurologic Surgery and Deputy Director of the Surgical Device Innovation Accelerator at the Mayo Clinic in Rochester, Minnesota where she developed invasive and non-invasive solutions to unmet needs in the neuromodulation and other surgical practice areas.

SPEAKERS / KEYNOTE

KEYNOTE #1 / Robert Greenberg, MD, Ph.D.



Co-founder and former CEO and Chairman of the Board of Second Sight Medical Products, Inc. (NASDAQ: EYES) in Los Angeles, California. Dr. Greenberg is a leader in the field of neural prosthetics – having developed and brought to market the world's most advanced implantable neural stimulator, the Argus II visual prostheses, to treat retinitis pigmentosa, a form of blindness.

Dr. Greenberg was also a medical reviewer at the FDA's Office of Device Evaluation. Dr. Greenberg is the recipient of numerous honors and awards, has over 260 issued US patents and over 100 international patents, and has published over 60 articles. He received MD and PhD degrees from the Johns Hopkins School of Medicine in Baltimore, Maryland. Dr. Greenberg joined AMF in 2004 as Chairman of the Board of Directors.

KEYNOTE #2 / Helen Mayberg, MD



Helen Mayberg, MD is Professor of Neurology, Neurosurgery, Psychiatry and Neuroscience, and the Mount Sinai Professor in Neurotherapeutics at the Icahn School of Medicine where she serves as the founding Director of the Center for Advanced Circuit Therapeutics. Dr. Mayberg was recruited to New York after 14 years at Emory University in Atlanta where she was Professor of Psychiatry, Neurology and Radiology and the Dorothy Fuqua Chair in Psychiatry

Neuroimaging and Therapeutics. Her research has characterized neural systems mediating major depression and its recovery, defined imaging-based illness subtypes to optimize treatment selection, and introduced the first use of deep brain stimulation for treatment resistant patients.

Dr. Mayberg received a BA in Psychobiology from UCLA and a MD from University of Southern California, and then completed her neurology residency at the Neurological Institute of New York, and fellowship training in nuclear medicine at Johns Hopkins. She is a member of the National Academy of Medicine, the National Academy of Arts and Sciences, and the National Academy of Inventors, and has authored more than 200 publications, and participates in a wide variety of advisory and scientific activities across multiple fields in neuroscience.

SPEAKERS / SYMPOSIUM #1

Probing The Network: New Approaches For Studying Mechanisms of Target Engagement

Aaron Suminski, Ph.D. is a Senior Scientist, Department of Neurological Surgery at the University of Wisconsin-Madison. He is also a founding member and Associate Director of the Wisconsin Institute for Translational Neuroengineering (WITNe). He received his B.S. in Biomedical Engineering from Milwaukee School of Engineering in 2000 and Ph.D. in Biomedical Engineering from Marquette University and the Medical College of Wisconsin in 2006. He completed his postdoctoral training at the University of Chicago, where he investigated how changes sensory feedback shape the activity of neural populations in primary motor cortex (M1) during natural movement and neuroprosthetic control. Aaron arrived at UW-Madison in 2016 where his lab focuses on understanding how neuromodulation of the central and peripheral nervous system modulates neural activity both in close proximity to the stimulating electrodes and in neural circuits receiving projections from the site of stimulation.



Kristl Vonck, MD, Ph.D. is Professor in Neurology at Ghent University Hospital, Ghent, Belgium. Her medical training was carried out at Ghent University and her PhD thesis was entitled *Neurostimulation for refractory epilepsy, clinical efficacy and mechanism of action*. She has held international training positions at Guy's Hospital, London, UK; Yale University School of Medicine, New Haven, Connecticut, USA and the University of Stellenbosch, South Africa.



Her research interests include neurostimulation and neurophysiological home monitoring of neurological disorders. In the translational research setting of the Laboratory for Clinical and Experimental Neurophysiology, Neurobiology and Neuropsychology her team investigates the mechanism of action, efficacy and side effects of several neurostimulation modalities. Kristl Vonck has published widely in international peer-reviewed journals (>150 abstracts and >100 papers), has authored five book chapters and has given 120 international presentations.

Sarah "Holly" Hollingsworth Lisanby, MD

SPEAKERS / SYMPOSIUM #2

Next Generation Hardware: New Approaches to Stimulation and Recording at the Neural Interface

Polina Anikeeva, Ph.D. is an Associate Professor of Materials Science and Engineering and Brain and Cognitive Science at MIT. She is also an investigator at the McGovern Institute for Brain Research and an Associate Director of the Research Laboratory of Electronics. She received her BS in Physics from St. Petersburg State Polytechnic University in 2003 and her Ph.D. in Materials Science from MIT in 2009. She completed her postdoctoral training at Stanford, working on devices for optical stimulation and recording from neural circuits. In 2011, Polina joined faculty at MIT, where her lab now focuses on the development of minimally invasive materials and devices for neural recording, stimulation, and repair. Polina is a recipient of NSF CAREER Award, DARPA Young Faculty Award, the TR35, and 2018 Vilcek Prize for Creative Promise.



Silvestro Micera, Ph.D. is currently Professor of Bioelectronics at the Scuola Superiore Sant'Anna and Ecole Polytechnique Fédérale de Lausanne where he is holding the Bertarelli Foundation Chair in Translational Neuro-Engineering. He received the University degree (Laurea) in Electrical Engineering from the University of Pisa, in 1996, and the Ph.D. degree in Biomedical Engineering from Scuola Superiore Sant'Anna, in 2000. From 2000 to 2009, he has been an Assistant Professor of BioRobotics at the Scuola Superiore Sant'Anna. In 2007, he was a Visiting Scientist at the MIT with a Fulbright Scholarship. From 2008 to 2011 he was the Head of the Neuroprosthesis Control group and Adjunct Professor at the Institute for Automation, Swiss Federal Institute of Technology. In 2009, he was the recipient of the "Early Career Achievement Award" of the IEEE Engineering in Medicine and Biology Society. Dr. Micera's research interests include the development of neuroprostheses based on the use of implantable neural interfaces with the central and peripheral nervous systems to restore sensory and motor function in disabled persons.



He is author of more than 300 WoS peer-reviewed papers and several international patents. He is currently Associate Editor of *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, *IEEE Transactions on Medical Robotics and Bionics* and *IEEE Open Journal Biomedical Engineering*. He is also a member of the editorial boards of the Journal of Neuroengineering and Rehabilitation, Journal of Neural Engineering, and Scientific Reports.

John A Rogers, Ph.D. obtained BA and BS degrees in chemistry and in physics from the University of Texas, Austin, in 1989. From MIT, he received SM degrees in physics and in chemistry in 1992 and the PhD degree in physical chemistry in 1995. From 1995 to 1997, Rogers was a Junior Fellow in the Harvard University Society of Fellows. He joined Bell Laboratories as a Member of Technical Staff in the Condensed Matter Physics Research Department and served as Director of this department. He spent thirteen years on the faculty at University of Illinois, most recently as the Swanlund Chair Professor and Director of the Seitz Materials Research Laboratory. In the Fall of 2016, he joined Northwestern University as the Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering, Biomedical Engineering and Medicine, with affiliate appointments in Mechanical Engineering, Electrical and Computer Engineering and Chemistry, where he is also Director of the recently endowed Querrey Simpson Institute for Bioelectronics. He has published more than 750 papers, is a co-inventor on more than 100 patents and he has co-founded several successful technology companies. His research has been recognized by many awards, including a MacArthur Fellowship, the Lemelson-MIT Prize, the Smithsonian Award for American Ingenuity in the Physical Sciences, the MRS Medal and most recently the Benjamin Franklin Medal from the Franklin Institute. He is a member of the National Academy of Engineering, the National Academy of Sciences, the National Academy of Medicine, the National Academy of Inventors and the American Academy of Arts and Sciences.



SPEAKERS / SYMPOSIUM #3

Translational Neuroscience Trials: Early Clinical Data

Mark George, MD

Alireza Gharabaghi, MD is the Founding Chair and Director of the Institute for Neuromodulation and Neurotechnology, Department of Neurosurgery and Neurotechnology, at the University Hospital and University of Tuebingen, Germany. He studies state-dependent, closed-loop brain stimulation paradigms to augment plasticity induction and has contributed to clinical stimulation studies that have redefined treatment guidelines. While establishing novel electrophysiological methods of data acquisition and network analysis during brain stimulation, his clinical and research interests lie in the field of context-specific neuromodulation and closed-loop neuroprosthetics for neurorehabilitation of motor function in neurodegenerative disorders and following brain injury such as stroke.



Monica Perez, PT, Ph.D. is the Scientific Chair of the Arms + Hands Lab at the Shirley Ryan AbilityLab, a Professor in the Department of Physical Medicine and Rehabilitation at Northwestern University, and a Research Scientist at the Edward Jr. Hines VA Hospital. She has studied neural mechanisms contributing to the control of voluntary movement in healthy humans and in people with spinal cord injury for over 15 years. Her research aims to understand how the brain and spinal cord contribute to the control of movement with the ultimate goal of using this mechanistic information to develop more effective rehabilitation therapies for people with spinal cord injury. This theme is mainly investigated from a neurophysiological point of view, using a combination of transcranial magnetic stimulation, magnetic resonance imaging, electrical stimulation, and behavioral techniques.



SPEAKERS / SYMPOSIUM #4

Neural Data Science and Analytics

Ritu Kapur, Ph.D. is the Head of Digital Biomarkers at Verily Life Sciences, a company focused on healthcare by applying scientific and technological advances to significant problems in healthcare. She serves as a cross-functional lead across teams of hardware, software, clinical and data scientists to develop and implement wearable and passive sensing technologies to help better diagnose, monitor, and intervene in disease.



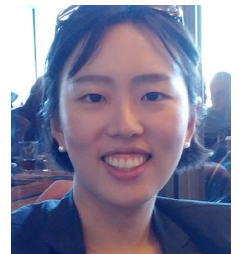
Her research interests include modeling, estimation and control of neural systems using electrical stimulation. She is a recipient of the GE faculty for the future scholarship, a National Science Foundation graduate research fellow, a L'Oreal For Women in Science fellow, the Burroughs Wellcome Fund Careers at the Scientific Interface Award, the Krishna Kumar New Investigator Award from the North American Neuromodulation Society, and a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) and the Whiting School of Engineering Robert B. Pond Excellence in Teaching Award.

Prior to joining Verily, Dr. Kapur was a Senior Clinical Research Scientist at NeuroPace, and part of the team that successfully completed a PMA for the world's first brain-responsive neurostimulator for the treatment of epilepsy. Dr. Kapur received a Doctorate in Neuroscience from the University of California, San Francisco, where she specialized in signal processing and awake behaving electrophysiology to study the brain systems underlying reward and learning. She graduated cum laude from Stanford University (Human Biology).

Sridevi V. Sarma, Ph.D. received the B.S. degree in electrical engineering from Cornell University, Ithaca NY, in 1994; and an M.S. and Ph.D. degrees in Electrical Engineering and Computer Science from Massachusetts Institute of Technology in, Cambridge MA, in 1997 and 2006, respectively. From 2000–2003 she took a leave of absence to start a data analytics company. From 2006–2009, she was a Postdoctoral Fellow in the Brain and Cognitive Sciences Department at the Massachusetts Institute of Technology, Cambridge. She is now an associate professor in the Institute for Computational Medicine, Department of Biomedical Engineering, at Johns Hopkins University, Baltimore MD.



Sooyoon Shin, Ph.D. is a senior data scientist at Cala Health, a California Bay Area start-up company that came out of the Stanford Biodesign program. Cala Health is a medical technology company pioneering non-invasive wearable therapies that combine peripheral nerve stimulation and sensing modalities to treat chronic disease. Prior to joining Cala Health, Sooyoon was Research Specialist at UCSF where she investigated brain mechanisms of vocal motor production and learning in songbirds.

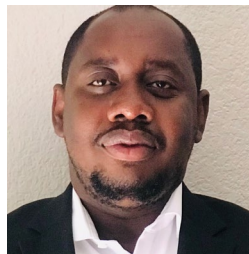


SPEAKERS / INDUSTRY PANEL

Chris Berka, CEO and Co-Founder of Advanced Brain Monitoring has over 30 years of experience managing clinical research and developing and commercializing new technologies. She is co-inventor of more than 20 patented and PI or Co-Investigator for grants awarded by the National Institutes of Health, DARPA, ONR, OSD, and NSF that provided more than \$37 million of research funds to ABM. As CEO of ABM, she leads the research team in projects designed to advance the design, implementation, and validation of novel EEG-based approaches for assessment of neural activity during sleep and waking. Novel empirically and theoretically derived algorithms are featured in her publications on assessing cognition in healthy participants in laboratory and real-world environments and in patients with sleep, psychiatric and neurological diseases. She is an experienced neuroscientist with over 100 publications on the analysis of the EEG correlates of cognition in healthy subjects and patients with sleep and neurological disorders, received her B.A. with distinction in Psychology/Biology at Ohio State University, and completed graduate studies in Neuroscience at UCSD.



Dr. Felix Deku is the Director of Microfabrication and Microfabrication Facility Manager at Neuralink Corp. He previously worked as a Snr. Microfabrication Process Engineer where he developed innovative semiconductor manufacturing processes to meet emerging technology needs. In his role as Director of Microfabrication, Dr. Deku provides technical leadership on thin-film array design innovation, advanced manufacturing technology, electrode material development, characterization and testing, process control and high-volume manufacturing while leading the company to tackle the material challenges of the brain machine interface. His main interests are in the development and characterization of next-generation electrode materials for neural stimulation and recording with particular focus on materials and interfacial engineering. Before joining Neuralink, Dr. Deku demonstrated the development and fabrication of the first intracortical microelectrode arrays based on amorphous silicon carbide. Dr. Deku earned a BS degree in Molecular Biology and Biotechnology from the University of Cape Coast, Ghana and MS and Ph.D. in Biomedical Engineering from The University of Texas at Dallas.



Amy Kruse, Ph.D. is the Founder and President of Sattva Science, LLC. She works closely with organizations of all sizes, empowering teams to advance and realize R&D investments. Her current areas of focus are the application of neuroscience and emerging biotechnology to accelerate human performance optimization and create social change. Dr. Kruse is formerly the Chief Scientific Officer at Optios, an applied neuroscience company. She also served as the VP and Chief Technology Officer at Cubic Global Defense overseeing their R&D portfolio. Dr. Kruse served as a government civilian program manager at the Defense Advanced Research Projects Agency (DARPA) where she created and oversaw the Agency's first performance-oriented portfolio of neuroscience programs. She also coined the term "Operational Neuroscience."



She is a Founding Member of the Loomis Innovation Council at the Stimson Center in Washington DC, a member of DARPA ISAT Study group, an Advisor for Prime Movers Lab and a Guest Lecturer for Singularity University. She is a frequent contributor to panels and boards for organizations including DARPA, the National Academies and the Defense Science Board. She is an internationally recognized and sought-after panelist and keynote speaker, and a member of the All Raise Visionary Voices speakers bureau. She is also the author of numerous scientific papers, chapters, and articles. Dr. Kruse earned a BS in Cell and Structural Biology and a PhD in Neuroscience from the University of Illinois at Urbana-Champaign, where she was awarded an NSF Graduate Fellowship.

Ana Maiques, MBA is the CEO of Neuroelectrics, a company aiming to change the way we interact with the brain, developing innovative technologies to monitor and stimulate the brain to help many patients in need. She was nominated by IESE as one of the most influential entrepreneurs under 40 in Spain (2010) and received the EU Prize for Women Innovators from the European Commission EC in 2014 and one of the Most Inspiring Fifty Women in Europe. Neuroelectrics recently received the Best Start-up in Health 2015 by Wired UK magazine in an amazing event in London. She now lives in Boston where Neuroelectrics was awarded as one of the 2016 Best Entrepreneurial Companies in USA by Entrepreneur Magazine. She recently joined the European Innovation Council Advisory Board, the pan European organism that aims to scale up European companies.



SPEAKERS / INDUSTRY PANEL

Martha Morrell, MD has been Chief Medical Officer of NeuroPace, Inc. and a Clinical Professor of Neurology at Stanford University since July 2004. Before joining NeuroPace, she was the Caitlin Tynan Doyle Professor of Clinical Neurology at Columbia University and Director of the Columbia Comprehensive Epilepsy Center at New York Presbyterian Hospital in New York City. Previously she was on the faculty of the Stanford University School of Medicine where she served as Director of the Stanford Comprehensive Epilepsy Center. A graduate of Stanford Medical School, she completed residency training in Neurology at the University of Pennsylvania, as well as fellowship training in EEG and epilepsy.



Dr. Morrell has been actively involved in helping to bring new therapies to patients. Her responsibilities at NeuroPace include all clinical and pre-clinical research for a novel responsive neurostimulator for the treatment of medically uncontrolled epilepsy. She has been actively involved in investigational trials of new epilepsy therapies as an academic investigator, and has authored or coauthored more than 150 publications.

Her service to professional societies includes member of the Board of Directors of the American Epilepsy Society, member and Chair of the Board of the Epilepsy Foundation, member of the Council of the American Neurological Association and Chair of the Epilepsy Section of the American Academy of Neurology. She is an elected Ambassador for Epilepsy of the International League Against Epilepsy and received the American Epilepsy Society's 2007 Service Award for outstanding leadership and service. She is the immediate past Chair of the American Society for Experimental Neurotherapeutics.

Brian Pepin, Founder and CEO of Rune Labs. Former engineering lead at Verily. Leadership team for Galvani Verily/GSK bioelectronics joint venture. UC Berkeley Maharbiz lab alumni. Recovering electrical engineer. Second-time founder. Google Search power user.



POSTER SESSION

LANDSCAPE: Morphometric Modeling for Neuromodulation

Hanna Lu, The Chinese University of Hong Kong
Li Zhang, The Chinese University of Hong Kong
Sandra Sau Man Chan, The Chinese University of Hong Kong
Linda Chiu Wa Lam, The Chinese University of Hong Kong

Fractal Geometry of Meditators

Pankaj Pandey, Indian Institute of Technology Gandhinagar
Krishna Prasad Miyapuram, Indian Institute of Technology Gandhinagar

Neurorehabilitation with Anodal tDCS on Broca and Cathodal tDCS on Its Right Homologue Improves Language in Post-stroke Aphasia: A Series of Cases

Ece Zeynep Karakulak, Istanbul Medipol University
Lütfü Hanoğlu, Istanbul Medipol University

Phase-coherent Stimulation of the Ipsilesional Motor Cortex Reverses Gait Asymmetries After Unilateral Lesion of the Spinal Cord

Elena Massai, Université de Montréal
Marco Bonizzato, Université de Montréal
Marina Martinez, Université de Montréal

Individualized Classification of Working Memory Performance Using Single-Trial Electroencephalography

Mina Mirjalili, Centre for Addiction and Mental Health
Reza Zomorodi, Centre for Addiction and Mental Health
Zafiris J. Daskalakis, University of California
Sean Hill, Centre for Addiction and Mental Health
Tarek K. Rajji, Centre for Addiction and Mental Health

Lower Limb Rehabilitation after Stroke: Brain-Computer Interface, Electrical Functional Stimulation and Virtual Feedback

Marc Sebastian-Romagosa, g.tec medical engineering Spain S.L.
Woosang Cho, g.tec medical engineering GmbH
Katrin Mayr, g.tec medical engineering GmbH
Christoph Guger, g.tec medical engineering GmbH

Polymer-based Implantable Neural Probe Nanofabrication

Eve McGlynn, University of Glasgow
Rupam Das, University of Glasgow
Vahid Nabaei, University of Glasgow
Hadi Heidari, University of Glasgow

On Augmenting Working Memory through Neurostimulation

Rohith Karthikeyan, Texas A&M University
Ranjana Mehta, Texas A&M University

Predicting Finger Kinematics Across Force Contexts

Matthew Mender, University of Michigan
Samuel Nason, University of Michigan
Matthew Willsey, University of Michigan
Parag Patil, University of Michigan
Cynthia Chestek, University of Michigan

The Neural Port: A Novel Implantable Human-Machine Interface

Connor Glass, Deus Ex Machina Technologies Inc.
Nitish Thakor, Johns Hopkins Department of Biomedical Engineering
Sami Tuffaha, Johns Hopkins Department of Plastic and Reconstructive Surgery

Neurotechnologies for Optimal Human-Machine Collaboration in Decision-Making

Davide Valeriani, Massachusetts Eye and Ear

Low-cost Brain-and-World-Monitoring Eyeglass

Steve Mann, Blueberry
John David Chibuk, Blueberry
Cayden Pierce, Blueberry

A Flexible Real-Time Platform for Adaptive Neuroscience Experiments

Anne Draelos, Duke University
Maxim Nikitchenko, Duke University
Chaichontat Sriworarat, Duke University
Daniel Sprague, Duke University
Matthew Loring, Duke University
Eftychios Pnevmatikakis, Flatiron Institute
Andrea Giovannucci, University of North Carolina
Eva Naumann, Duke University
John Pearson, Duke University



POSTER SESSION

Quantifying Cross-modal Plasticity in the Sight-restored

Negin Nadvar, University of Michigan - Department of Biomedical Engineering

John Jonides, University of Michigan - Department of Psychology

James Weiland, University of Michigan - Department of Biomedical Engineering, Department of Ophthalmology and Visual Sciences

Magnetolectric Nanoparticles-Based Wireless in Vitro Neuron Stimulation with Sub 100- μm Spatial Differentiation

Ping Liang, CELLULAR NANOMED, INC.

Elric Zhang, University of Miami

Shawnus Chen, CELLULAR NANOMED, INC.

Ian Smith, University of California - Irvine

Audrey Fung, CELLULAR NANOMED, INC.

Manuel Campos, University of Miami

Brayan Navarrete, University of Miami

Isadora Smith, University of Miami

Tyler Nguyen, Indiana University - Purdue University at Indianapolis

Xiaoming Jin, Indiana University - Purdue University at Indianapolis

Sakhrat Khizroev, University of Miami

Magnetic Stimulation of Neuronal Activity in Cortical Slices Using Magneto-Electric Nanoparticles

Tyler Nguyen, Indiana University

Jianhua Gao, Indiana University

Xiaoming Jin, Indiana University

Elric Zhang, University of Miami

Isadora Smith, University of Miami

Ping Liang, CELLULAR NANOMED, INC.

Sakhrat Khizroev, University of Miami

Wearable BCI Camera for Enhanced Memory

Steve Mann, Stanford University

David Eagleman, Stanford University

Ariel Garten, InteraXon

Cayden Pierce, Blueberry

John David Chibuk, Blueberry

Shape Changing Polymer Bilayer for Implanted Flexible Electronics

Muru Zhou, University of Michigan, Ann Arbor

Do Hyun Kang, University of Michigan, Ann Arbor

Jinsang Kim, University of Michigan, Ann Arbor

James Weiland, University of Michigan, Ann Arbor

Challenges of a Bottom-Up Approach to Developing Visually Driven Brain-Computer-Interfaces

Holly Wilson, University of Bath

Michael Proulx, University of Bath

Eamonn O'Neill, University of Bath

BCGNet: A Deep Learning Toolbox for Ballistocardiogram Artifact Suppression in EEG-fMRI Recordings

Jiaang Yao, Columbia University

Yida Lin, Columbia University

James McIntosh, Columbia University

Linbi Hong, Columbia University

Josef Faller, Columbia University

Paul Sajda, Columbia University

A Wireless Network of Microimplants for Neural Recording and Microstimulation

Jihun Lee, Brown University

Ah-Hyoung Lee, Brown University

Vincent Leung, Brown University

Jiannan Huang, Brown University

Peter Asbeck, Brown University

Patrick P. Mercier, Brown University

Stephen Shellhammer, Brown University

Lawrence Larson, Brown University

Farah Laiwalla, Brown University

Arto Nurmikko, Brown University